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REMARKSREMARKS

Reconsideration and further examination is respectfully requested. Claims 1-20 are currently pending in this application.

Obviousness type double patenting rejection

Applicants' acknowledge the Examiners' double patenting rejection over pending application number 09/753,080. Applicants have not filed a terminal disclaimer at this point, as the allegedly conflicting claims have not yet been fully prosecuted or patented.

Rejections Under 35 U.S.C. §103

Claims 1-6, 8-16 and 18-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Moore et al. (U.S. 6,408,342) in view of Pettus (U.S. 6,223,217).

Moore describes, in the Abstract, a communication framework supporting multiple communication protocols. The communications framework has a remote procedure call class providing an interface for an apply method, the apply method referencing a remote object, an operation to be performed, and an argument list. The communications framework also having at least one remote procedure call transport deriving from the remote procedure call class, each remote procedure call transport providing an implementation for the apply method whose interface is provided by the remote procedure call class.

The purpose of Moore is described at column 7, lines 45-50 as:

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"... The present invention provides a communications framework for enabling processes in a distributed computing environment to use any of a number of communications protocols for remote method invocation on objects in other processes. The communications protocol actually used by the communications framework to effect a remote method invocation is transparent to the programs issuing the remote method invocation. Furthermore, the selection of a protocol is dynamic--i.e., which protocol is being used may change from one invocation of a remote method to the next..."

With regard to QoS, Moore describes decision logic, at column 19, lines 37-55 as follows:

"...Quality of Service ... The apply{character pullout} call may receive a CallInfo argument or an argument which refers to a CallInfo object. A CallInfo is an object (or a reference to an object) that is a collection of Quality of Service (QoS) parameters. Examples of such parameters include performance characteristics (e.g., throughput, latency), rebinding policy, payment mechanism, security policy, quality of protection (e.g., encryption, privacy, authentication, authorization lists), and concurrency policy.

Pettus:

Pettus describes, in the Abstract, a system wherein remote procedure call (RPC) objects are provided in both a client node and a server node of a client-server network for invoking and responding to service requests generated by calls to local service objects. Specifically, the RPC objects comprise a "caller" object which, once instantiated, accepts service requests from client objects. A service request made by calling a function in the local service object is automatically routed by the caller object to a local service program if the requests can be serviced locally, or to a remote server node if the appropriate service program is located on the remote node. The RPC objects also include a "dispatcher" object which is located at the remote service node and receives incoming service requests.

Thus both Moore and Pettus describe interactions between the remote server and the client system. However, neither of the references, alone or in combination with each other,

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describe or suggest the steps of the claimed invention, as amended, which now clearly recites

“...A method for classifying a remote procedure call from a client system in a first network that initiates connections to a remote server in a second network *via a classifying edge router* using a client and underlying remote procedure call transport call, the method comprising ... detecting when a connection carrying high value data for the remote procedure call is created ... *using a side channel to communicate flow information associated with the detected connection to the classifying edge router, the flow information including a port number associated with the communication, the flow information provided to enable the classifying edge router to classify the remote procedure call* as it is transferred from the first network to the second network; and ... incorporating the flow information into a differentiated services classification subsystem of the classifying edge router by associating a quality of service level to the detected connection in accordance with the flow information....”

Response to Examiner's Arguments

The present invention overcomes the problems of the prior art described in page 3 of Applicants' specification, by overcoming the difficulty of RPC calls being hard to detect by QoS classifiers in edge routers. In particular, as recited in the independent claims of the present invention recite that the method does so by “...using a side channel to communicate flow information associated with the detected connection to the classifying edge router, the flow information including a port number associated with the communication, the flow information provided to *enable the classifying edge router to assign a quality of service classifier to the remote procedure call for appropriately prioritized transfer to the second network...*”

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The Examiner had stated, in the office action at pages 8-9 that 'the claims do not appear to clarify how the present invention overcomes the problem...' Applicants amendments now clearly show how the present invention overcomes the problem of the prior art.

In contrast, Moore describes a system wherein an RPC server can accommodate requests from a variety of clients operating under different protocols. Pettus describes a system wherein a service can be handled either at the client or at the server. Neither reference addresses the problem of overcoming QoS recognition difficulties associated when RPC requests span multiple networks.

Accordingly, for at least the reason that the combination of references fails to teach or describe the claimed invention, the rejection is overcome and should be withdrawn.

The Examiner states, at page 5 of the final Office Action: "... Moore does not specifically teach associating a quality service level to the detected connection in accordance with the flow information.... Pettus teaches associating a quality service level to the detected connection in accordance with the flow information.... It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Pettus and Moore because Pettus' teaching would have provided the capability for efficiently implementing remote procedure call mechanism in client-server systems of distributed service networks so that service requests generated by a client object can be satisfied by a server object..."

Combination neither describes nor suggests the claimed invention

Claims 1-20:

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For example, claim 1 includes the steps of "...using a side channel to communicate flow information associated with the detected connection to the classifying edge router, the flow information including a port number associated with the communication, the flow information provided to *enable the classifying edge router to assign a quality of service classifier to the remote procedure call for appropriately prioritized transfer to the second network...*"

Moore describes a system of negotiated 'QoS', whereby 'Both the caller and callee may manipulate the CallInfo', where 'Callinfo is an object ... that is a collection of QoS parameters...' (Moore, column 19). In Moore, although the Stub 303 puts in a request for a particular QoS, the RPC_Transport 305 asserts to the Stub 303 which QoS level it can meet. The portion of the specification provided by the Examiner illustrates that the Stub then chooses a protocol according to the QoS that is made available by the server.

Pettus describes a system wherein the dispatcher object stores a dictionary at the server, and "associates pointers to the service functions with the class used to create the client objects..."

As mentioned above, while both references show methods for associating classes, or qualities of service, with RPC objects, neither describes or suggests the steps of "...using a side channel to communicate flow information associated with the detected connection ... the flow information including a port number associated with the communication, the flow information provided to *enable the classifying edge router to assign a quality of service classifier to the remote procedure call for appropriately prioritized transfer to the second network...*" as recited in the independent claims of this application. For at least the reason that the combination of references fails to describe or suggest the limitations of the claims, the rejection is overcome and

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should be withdrawn. Independent claim 11 includes similar limitations, and is patentable for reasons similar to those put forth with regard to claim 1.

Dependent claims 2-10 and 12-20 serve to add further patentable limitations to their parent independent claims, and are allowable for at least the reasons put forth with regard to the parent claims. However, each claim also includes limitations that are patentably distinct over Moore.

Claims 6, 8:

For example, Applicant's claims 6 and 8 each recite "...wherein the flow information includes a five-tuple including sender and receiver Media Access Control (MAC) and Internet Protocol (IP) addresses, sender and receiver MAC and IP port numbers, and Transmission Control Protocol (TCP) protocol type for the connection...." Although the Examiner states, at page 4 of the Office Action that Moore 'teaches MAC and IP addresses ... and MAC and IP port numbers ... and TCP protocol type....' Applicants note that these elements are not disclosed in Moore in the same arrangement as they are recited in the claims. Rather, Applicant's note that claim 6 depends from claim 1, wherein the forwarding information is incorporated "...into a differentiated services classification subsystem of the classifying router by associating a quality of service level to the detected connection in accordance with the flow information..." No such structure is shown or suggested in Moore. Accordingly, for this additional reason claims 6 and 8 are patentably distinct over Moore, and the rejection should be withdrawn.

Claims 7 and 17:

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Claims 7 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Moore in view of Pettus and further in view of Riddle et al (U.S. 6,412,000 B1).

Riddle describes, in a packet communication environment, a method is provided for automatically classifying packet flows for use in allocating bandwidth resources by a rule of assignment of a service level. The method comprises applying individual instances of traffic classification paradigms to packet network flows based on selectable information obtained from a plurality of layers of a multi-layered communication protocol in order to define a characteristic class, then mapping the flow to the defined traffic class. It is useful to note that the automatic classification is sufficiently robust to classify a complete enumeration of the possible traffic.

Accordingly, Riddle describes an entirely different method of packet classification, where classes are automatically assigned service levels. However, Riddle fails to describe the use of a side channel to forward flow information to an edge router to thereby facilitate classification of RPC requests across network boundaries as recited in the independent claims of the present invention, and thus does not overcome the problems associated with the combination of Moore and Pettus as described above. For at least this reason it is respectfully requested that the rejection be withdrawn.

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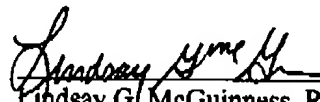
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Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Lindsay G. McGuinness, Applicants' Attorney at 978-264-6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

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Date


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